

REMARKS FOR ADMINISTRATOR BOLDEN
MONMOUTH UNIVERSITY COMMENCEMENT

May 18, 2011

Thank you to the members of the Class of 2011 for letting me share your special day. It's my honor to be speaking here and an honor to receive this honorary degree. Thank you, Dennis (Coleman), for that citation.

Many of you may be aware that your President, Dr. Paul Gaffney, and I began our friendship in the summer of 1964 when we both reported for duty as Midshipmen at the U.S. Naval Academy. I was a snotty-nosed kid from Columbia, SC who had dreamed since 7th grade of becoming a Midshipman with no clue of what that would mean in my life. Our friendship - begun all those 47 years ago - remains strong to this day and the ties of this friendship run deep. Such will be the ties you all have made in the past four years – in some cases maybe five – here at Monmouth. I'm sure your parents, if you were fortunate to have help from them, can give you an exact accounting.

As I said, I realized a many-year dream when I was accepted to the U.S. Naval Academy. When President Gaffney and I checked in, "undecided" wasn't a major and unfortunately for me, I can't say that I was fully "decided" on anything when I entered. Two things were certainties for me – I definitely was not going to be a Marine and I didn't plan on becoming a pilot – flying in space was out of the question. But those two things have ended up defining my career and my life.

So first, I would tell you, don't stress out on tomorrow. It will happen, and you will be ready to make choices, some of which will be thrust upon you and some of which you can take with some measure of time.

Today is about a lot of things. It's bittersweet goodbye to some of your friends and well-loved faculty as well as to a way of life to which you've become accustomed here at Monmouth. For the undergraduates, in a sense, it's farewell to that last part of your life where you were allowed to be "children." I mean no disrespect, but I think many of you know you weren't fully grown up and mature when you got here. That's actually fine and you're still young, so cherish this time. If you think a brash young man approaching an airplane cockpit for the first time (that would be me) when

my Mom hadn't allowed me to get a driver's license until my senior year in high school – if you don't think that's a little scary – well – let's just say, we all grow up on the job.

For you in the Class of 2011, today is also about the future, and opportunities, and promise, and so many expectations. What a wonderful place to be! I hope you can carry some of what is in your hearts right now into the job search; into the workplace; into your role as citizens of the globe.

In today's global economy, you are separated from colleagues and friends by very little. Past enemies are now friends. Communication is instant and personal.

When I flew in space, I was privileged to witness our Earth from a totally different vantage point, where you see no boundaries between nations and people except as established by Mother Nature. There's just not much we can do about some of those mountain ranges; or the vast deserts; or sheets of glacial ice – which, by the way, we are observing keenly at NASA. I hope some of you will join us to become monitors of our planet's

health. Boundaries today are largely political, but even those, as witnessed by the recent uprisings in the Middle East so much fueled by social media, are at best constructs that are changing rapidly.

I know you are a generation that has grown up in that "instant" stew. You probably don't remember writing letters by hand with pen and ink, or God forbid, on a typewriter if you wanted to be really formal. Paper books and newspapers smacking your front step every morning – even regular telephone calls that you might actually miss and not even know you had received – these are all things of the past. You're all used to instant messaging – wide dissemination of personal details and feelings and viewpoints. Nothing wrong with that – I love my iPad.

I work at an agency where our business is the future. We've helped bring a lot of those things to you and have made widespread use of them ourselves. In fact, a lot of the things we developed to travel to the moon, or to image the inside of Mars or to observe our planet or establish communications between fleets of satellites, have led to the very interconnectivity and technology-laden society you all know today.

But at the heart of all this – there has to be a person – a person making choices; informed choices, one hopes – compassionate choices. I flew on the first shuttle mission with a Russian cosmonaut as a mission specialist crewmember. I'd been trained in the military that this man was my enemy. But an amazing thing happened as we trained for our mission together. Our families got to know each other. We went out for Tex-Mex in Houston. He was no more my enemy than any of you. The Cold War had "officially" been over for a few years, but those old ideas were hard to dispel. But I am still friends with that man, Sergei Krikalev, nearly 20 years later, and he is now the most experienced humans at living and working in space – having spent more than two years in space during his four missions on the Russian Space Station, Mir, and the International Space Station (ISS). He's now the Director of the Gagarin Cosmonaut Training Center in Star City, Russia while I serve as the NASA Administrator here in the U.S.

Your generation has the chance to make many more such connections. Where I was privileged because of my work, you probably have Facebook friends in other countries.

So my business for nearly a third of my career has been space. None of this was in the plan. I had to be talked into it by the late, great Dr. Ron McNair, who had been selected by NASA in the first group of Space Shuttle astronauts in 1978. When Ron and I first met after his first year in the Astronaut Office, he asked me if I intended to apply in the second round of space shuttle astronaut selection. When I responded to him that I would not because I didn't think I would be accepted, he told me that was the dumbest thing he'd ever heard. I think that's literally what he said. As he said to me...how did I know I'd not be selected if I didn't apply? Accepting his challenge, I submitted my application, was accepted in the second group of Shuttle astronauts, and the rest is history. Through all this, my wife, Jackie, who is here with me today, has been by my side. She's stuck with me through a 34-year Marine Corps career and now our return to NASA in our 43 years of marriage. She will tell you and I'll agree, this has been challenging – hard on both sides – hard on our kids; both now grown. I enjoyed every trip to space, but for my family – it was quite stressful.

Unfortunately, my role model and mentor, Ron McNair perished as a member of the STS-51L Challenger crew just ten days after I landed from

my first space flight and the worst fears of the space program were realized – the first casualties since the Apollo 1 crew.

Following the accident, I was assigned to the special group tasked with getting us back on our feet; scrupulously analyzing what went wrong; helping ease the human suffering the accident had caused; and getting us back into space. It's what Ron would have wanted.

I hope all of you are blessed with mentors like that. People who really make a difference in your lives. Seek them out. Keep in touch with the ones you have met here at Monmouth. You are not ending your association with the intellectual and social life you had here, you are taking it to a new level as you expand your horizons and take your education and training out into the world with you. The spirit of Monmouth will always be a part of your life.

Maybe you'll use your education in practical ways or maybe you won't, but you've learned how to make choices and analyze things and, yes – become citizens of that larger world, maybe without really being aware of it.

This is one of the things Monmouth has given you, in classrooms and internships and all the opportunities to grow and challenge yourselves and think about the future in all its glorious non-definition. We all start with a blank pad. And move the images from our mind to the grid. Which, in NASA's case often becomes an intricate machine for leaving the bounds of gravity on its way to the edge of the solar system.

Or maybe that engineer's dream is closer to home and he wants to find a way to study something on our home planet that we don't know about. Next month we launch Aquarius, which will be NASA's first satellite to study ocean salinity. You might say, "Yeah, NASA, the oceans are salty. Thanks." But this satellite, from its orbit, will be able to measure changes in salinity as small as about two parts per 10,000, equivalent to a pinch of salt in a gallon of water. This knowledge is essential for helping us to understand how salinity variations influence ocean circulation; trace the path of freshwater around our planet; and help drive Earth's climate.

Ok, I just got a little more technical than I intended there. But I am the head of one of the largest science, engineering, and technology organizations in the world, after all. And I just got a Doctor of Laws degree.

Seriously though, my point is there is so much to do; so many amazing things yet to learn about the world, about our universe, and about ourselves – niches you can create. Later this year we'll send a rover the size of a small car to land on Mars, the Mars Science Laboratory (MSL). Among other things, MSL will evaluate whether life might at one time have been possible there, or whether it's still possible. We have named the rover *Curiosity*. Each one of its instruments is backed by a team of professionals – people who are passionate about their work with MSL. They're going to be monitoring and sifting "tweets" from *Curiosity* for years. Did they major in Martian geology? Probably not... Similarly our astronauts, six of whom just launched on the Space Shuttle Endeavour to the International Space Station on Monday, have many varied backgrounds that they have applied to get to space, but that won't be the only thing they do with their careers.

That shuttle, the last mission for Endeavour, by the way, carried the Alpha Magnetic Spectrometer (AMS). That's not a science fiction device no matter how much it sounds like something Dr. Evil or a Bond character might have concocted. It's an instrument to search for antimatter, dark

matter, and measure cosmic rays. Okay, that sounds like science fiction. But it's not at all – it's now science fact.

I could tell you all about a huge, huge number of other cool things just like that we have coming up -- a mission to Jupiter; a satellite orbiting an asteroid for the first time this summer; a probe using gravity to study the interior of the moon.

Even if none of this space stuff interests or excites you, this changing world of ours is, if nothing else, providing unprecedented ways for you now graduating to chart their own courses and really do something that hasn't been done before. You may not be the next Zuckerberg, but I bet you're passionate about something. You all know a lot about something. I bet Monmouth gave you some tools to help set free your passions and make them useful parts of your life.

With all our technology, we still can't take space exploration for granted. People have died and multi-million dollar satellites have fallen into the ocean. Space is a harsh environment. Getting there is hard and staying there is harder. This is not unlike life itself; but it's all so worth it! Not just

to put 7 human beings on an explosive rocket with 7 million pounds of thrust and send them to an outpost the size of a football field that's flying 250 miles above us; not just so we can beam back the first images from orbit of Mercury by the MESSENGER spacecraft as we began to do in March. We take on these challenges to defy our self-defeating voices; to raise our aspirations to our highest potential; to reach for something we can't quite get to, but think we can. These have always been the precepts of the space program. They're also the precepts of a life well lived.

I was blessed with parents who were lifelong educators, and they had high expectations for me, not only for my education, but also for the values by which I would live my life. It wasn't easy having my father be my football coach, and my mother as my librarian, but at the same time, they gave me my moral compass and my core values. When I eventually – as we all must – went on my road as an adult, they were always with me. I might have been a space shuttle commander and a Marine Corps general officer, but it still paid to sit up straight, listen to other viewpoints and not shirk decisions. My wife and I have always given this advice to our children, and it came from our parents: dream big dreams, do what you want to do, don't listen to anyone who tells you can't do something or you don't belong.

So today you are in the business of the future. And what an exciting future it is. Take charge of it. There's always going to be end of the world type of news. It's not true. We will survive. We will persevere. If anything, flying to space has given me that perspective. Our planet, Earth, while a fragile glowing marble in an unbelievably vast sea of space, is strong, enduring, and resilient, but it needs our help. Earth is ours and we belong to it.

Yes, our world is changing, it always does. But in many ways, it is much the same as it was when Paul Gaffney and I walked across the stage to receive our Bachelor's Degrees and our commissions. My parents sat in the audience, quite proud; my aunts and uncles had tear-stained faces. Even then, I knew the world, as chaotic as it was, would offer me challenges that would help me grow and mature.

For me it's been a tremendous ride since then. Each of you has a world of opportunity today. The world -- the universe -- is yours. With diligence, it's literally in the palm of your hands. Today, with Hubble and other great telescopes, we can look back to nearly the beginning of time, but tomorrow lies deep inside of you, your imagination, your curiosity, and your passion.

Let me close with a story of Nkosi Johnson...a young African child born in a place called Kwa Zulu Natal, South Africa...

“Do all that you can...

With what you have...

In the time that you have...

In the place that you are!”

Don't let the opportunity to make a difference in your world pass you by.

God bless you all and God bless the United States of America!